CAAM 210 Syllabus Spring 2015

Instructor: Steve Cox, DCH 2007, x5192, cox@rice.edu.

Office Hours: Thursday 2-5 or by appointment.

Class: MW 10-10:50am, Keck 100 and Thursday or Friday Lab

Required Online NoteSet: http://www.caam.rice.edu/∼cox/Cox210.pdf

Required Software: MATLAB and Simulink Student Suite, $99, plus $10 for the Bioinformatics Toolbox. http://www.mathworks.com/academia/student_version/

Goals: We strive for Matlab fluency on 4 planes; To speak the language free of syntactic error, to confidently translate English simulation and/or design questions, to identify the proper numerical method for the job, and to represent the solution in the most visually striking way possible.

Schedule of Weekly Reading Assignments and Project Due Dates

Jan. 12. Chap. 2: Loops, Matrices and Fractals. Project due Jan. 21.

Jan. 19. Chap. 3: Finding Real Roots via Bisection. Project due Jan. 26.

Jan. 26. Chap. 4: Finding Real Roots by Newton's Method. Project due Feb. 2.

Feb. 2. Chap. 5: Finding Complex Roots by Newton's Method. Project due Feb. 9.

Feb. 9. Chap. 6: Boolean Gene Networks. Project due Feb. 16.

Feb. 16. Chap. 7: Probabilistic Boolean Gene Networks. Project due Feb. 23.

Feb. 23. Chap. 8: Stochastic Simulation of Reaction Networks. Project due Mar. 9.

Mar. 2. Spring Break

Mar. 9. Chap. 9: Deterministic Simulation of Reaction Networks. Project due Mar. 16.

Mar. 16. Chap. 10: Modeling and Simulation of Fiber Networks. Project due Mar. 23.

Mar. 23. Chap. 11: Gaussian Elimination. Project due Mar. 30.

Mar. 30. Chap. 12: Optimal Design of Fiber Networks. Project due April 6.

April 6. Chap. 13: Multilayer Perceptrons. Project due April 13.

April 13. Chap. 14: Hopfield Networks. Project due April 20.

April 20. Chap. 15: Evolutionary Game Theory. Project due April 30.

Quizzes: 14 Owlspace Pledged Quizzes, over assigned reading, due each Thursday.

Exams: None.

Grade: 6% per project = 84%, 1% per quiz = 14%, 2% for Friday Lab participation.

Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain as confidential as possible. Students with disabilities will need to contact Disability Support Services in the Allen Center.